

REMARKS

Claims 1, 3, and 5-17 are pending in the application. Claim 3 is currently amended. Claim 4 is cancelled. Claim 12 has been amended to depend on claim 3, instead of cancelled claim 4. The now pending claims in the application in accord with 37 CFR 1.121, as revised, are set forth above.

No new matter has been introduced by virtue of the amendments made herein. Accordingly, applicants respectfully request their entry. In view of the amendments made herein and the remarks below, applicants respectfully request reconsideration and withdrawal of the rejection set forth in the March 21, 2006 office action.

Objection

The Examiner objected to the misspelling of the term "2-yliden" in claims 11, 15, and 17. In response, applicants have amended these claims to correct the spelling. Accordingly, applicants respectfully submit that the objection is overcome, and request the Examiner to withdraw the objection.

Rejection under 35 USC § 112, first paragraph

The Examiner rejected claims 3, 5, and 8-9 under 35 USC § 112, first paragraph, as allegedly being not enabled. Specifically, the Examiner states that the claim encompass various catalysts, however, the use of a mixture of palladium II acetate, tricyclohexylphosphine and base is the only exemplified catalyst in the specification.

Applicants respectfully traverse the rejection. However, solely in the interests of expediting prosecution, applicants have amended claim 3 to recite "a mixture of palladium II acetate, tricyclohexylphosphine and base" as the catalyst, without prejudice.

Accordingly, applicants respectfully submit that rejection of claims 3, 5, and 8-9 under 35 USC § 112, first paragraph is moot and request withdrawal of the rejection.

Rejection under 35 USC § 102(b)

The Examiner rejected claims 1, 3-4, 6-9, 11-13, and 15-17 under 35 USC § 102(b) as being anticipated by Singer.

In response, Applicants respectfully note that not all the claim limitations of the current claims are disclosed in Singer. Specifically, the use of ammonium hydroxide and the distillation step are not recited in Singer.

Accordingly, Applicants respectfully submit that claims 1, 3-4, 6-9, 11-13, and 15-17 are patentable under 35 USC § 102(b) and therefore request withdrawal of the rejection.

Rejection under 35 USC § 103(a)

The Examiner rejected claims 1 and 3-17 under 35 USC § 103(a) as being unpatentable over Singer. Specifically, the Examiner notes that the only difference from the current application and the prior art is 1) the use of ammonium hydroxide is not exemplified; and 2) the removal of the solvent by distillation is not disclosed. The Examiner finds these differences obvious to one skilled in the art.

In response, Applicants respectfully note that the use of base in the current application serves a different function during a different step of the process as compared to the cited reference. Specifically, the base used in the instant application, ammonia hydroxide, is not used in the coupling reaction, as discussed by the Examiner. The sodium t-butoxide is used in the step 1 coupling reaction of the cited reference, whereas the ammonium hydroxide is used in the isolation after the step 2 reaction in the instant application. Hence, the use of base in the instant application and in the prior art are for two completely different reasons and it is not a case of simply substituting one for the other, as the Examiner concludes.

Accordingly, applicants respectfully submit that the Examiner erred in concluding:

“there is a teaching of equivalence between ammonium hydroxide and sodium t-butoxide as the base in the process. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to use ammonium hydroxide as an alternative base.” (March 21, 2006 Official Action, page 8,)

In view of the remarks above, Applicants respectfully submit that it would not have been obvious. One skilled in the art could not have been motivated to use ammonium hydroxide as it is used in the instant claims because this step does not exist, nor is it suggested in the prior art.

With regard to the distillation step, the Examiner concludes that one skilled in the art would be motivated to use the distillation process because removal of solvent by distillation is well known in the art. Applicants respectfully disagree. Applicants do agree with the Examiner that distillation is a common practice used to yield and isolate a product. However, Applicants submit that what is not obvious to one skilled in the art is that this distillation step is critical to controlling the stability, integrity, and purity of the product. This is a surprising result that would not have been predicted by one skilled in the art. Without this distillation step, the product degrades and forms impurities due to the presence of THF.

The distillation process was developed to telescope a reaction to remove THF from the step 2 ethylene glycol cyclization to form a ketene acetal. In the cited prior art reference, which did not use distillation, there were several problems. First, THF with acid opens up to form 1-4 dibutanol which interferes with the reaction and lowers the yield. Second, the presence of THF in the cyclization process causes isolation problems of the product, giving a messy gum. However,

in the currently claimed process, both these issues are addressed. The currently claimed improved process produces significantly higher yields (96% yield versus 80% in the prior art) and the product is a solid, instead of messy gum.

Accordingly, Applicants respectfully submit that the use of ammonium hydroxide and the distillation step are both non-obvious over the prior art which result in significant improvements with respect to purity and yield.

In view of the remarks above, Applicants submit that claims 1 and 3-17 are patentable under 35 USC § 103(a). Accordingly, Applicants respectfully request withdrawal of the rejection.

In view of the remarks above and the amendments submitted herein, applicants respectfully submit that the pending claims are fully allowable, and solicit the issuance of a notice to such effect. If a telephone interview is deemed to be helpful to expedite the prosecution of the subject application, the Examiner is invited to contact applicants' undersigned attorney at the telephone number provided.

The Commissioner is hereby authorized to charge any fees required under 37 C.F.R. §§1.16 and 1.17 or to credit any overpayment to Deposit Account No. 16-1445.

Respectfully submitted,

Date: _____

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